IAP20 Res'd PCT/PTO 07 FEB 2006

temperature $\theta 2$ lying in the range 18 C to 25 C, preferably about 20 C, for a second cure duration t2 lying in the range 12 h to 36 h, preferably substantially equal to 24 h. This second cure T2 is performed to generate weak bonds within the mortar M12-14 that is to be crushed.

5

10

15

20

25

After performing the second cure T2 on the mortar M12-14 test pieces, they are split in two and then crushed using a jaw crusher C. Crushing is performed several times over and then the crushed mortar is screened in a screen T enabling manufactured grains 10 to be selected of sizes lying in the range 2 millimeters (mm) to 15 mm, and preferably in the range 6.3 mm to 10 mm.

A third cure T3 by immersing in water at a temperature 03 lying in the range 35°C to 45°C and preferably equal to about 40°C is then performed for a third cure duration t3 lying in the range 10 days to 15 days, in order to finish off hydration of the cement 16 which began during the second cure T2 and in order to consolidate the resulting manufactured grains 10, consolidating the bonds between the inclusions 12 and the matrix 14. This third cure T3 makes it possible to obtain strong bonds that limit the risk of the inclusions 12 separating. After this third cure T3, the mortar M12-14 is mature and consolidated manufactured grains 10 are obtained.

Two compositions given in the table below are given as examples of manufactured aggregates.

		Example 1	Example 2
		$(in kg/m^3)$	(in kg/m³)
Material 12	Gneiss sand	1412	
Material 12	Diortic sand		1550
Material 14	CEM I 52.5	652	673
	cement		
	Silica fume	65	68

,	Superplasticizer	12.3	13.0
	Water	217	223
	Water/cement	33%	33%
	ratio		

With reference to Example 1, a quantity Q12 of gneiss sand substantially equal to $1412~{\rm kg/m^3}$ is mixed with the elements of the second material in quantities corresponding to a quantity Q14.

12

CLAIMS

- 1. A method of fabricating manufactured aggregates (10), characterized in that the following steps are performed:
- supplying a first material (12) comprising particles;
 - supplying cement (16), water (22), and elements
 (18, 20) for forming a second material (14);
 - \cdot mixing a predetermined quantity (Q12) of said first material (12) with a predetermined quantity (Q16, Q18,
- Q20, Q22) of cement (16), water (22), and each of said elements (18, 20) of said second material (14), so as to obtain a mortar (M12-14) made up of inclusions (12) corresponding to the first material and a matrix (14) corresponding to the second material (14);
- subjecting the mortar (M12-14) to a first cure (T1) for a predetermined first cure duration (t1); and
 - crushing (C) said mortar (M12-14) to obtain manufactured aggregates (10) of size lying in the range 2 mm to 15 mm.

20

5

2. A method according to the preceding claim, characterized in that the mortar (M12-14) obtained by mixing is molded after being subjected to the first cure (T1).

25

3. A method according to claim 1 or claim 2, characterized in that the ratio of the quantity of water (Q22) to the quantity of cement (Q16) lies in the range 30% to 35%.

30

4. A method according to any preceding claim, characterized in that the first material (12) presents hardness greater than that of the second material (14) and forms hard inclusions in the mortar (M12-14).

35

5. A method according to either preceding claim, characterized in that, prior to being crushed (C), the

mortar (M12-14) is also subjected to a second cure (T2) for a second predetermined cure duration (t2).

- 6. A method according to the preceding claim,
 5 characterized in that the predetermined durations (t1 and t2) of the first cure and of the second cure are respectively substantially equal to 24 hours.
- 7. A method according to any preceding claim,
 10 characterized in that screening (T) is performed to
 select manufactured grains (10) of size lying in the
 range 2 mm to 15 mm.
- 8. A method according to any preceding claim,
 15 characterized in that the crushed mortar (M12-14) is
 hydrated by a third cure (T3) during a predetermined
 third cure duration (t3).
- 9. A method according to the preceding claim,20 characterized in that the predetermined duration (t3) of the third cure lies in the range 10 days to 15 days.
- 10. A method according to the preceding claim, characterized in that the first material (12) comprises particles of a size smaller than 1.5 mm.
 - 11. A method according to any preceding claim, characterized in that the first material (12) comprises particle of a size smaller than 1 mm.
 - 12. A method according to any preceding claim, characterized in that the elements of the second material (14) include a cement (16).
- 35 13. A method according to any preceding claim, characterized in that the elements of the second material include silica fume (18).

30